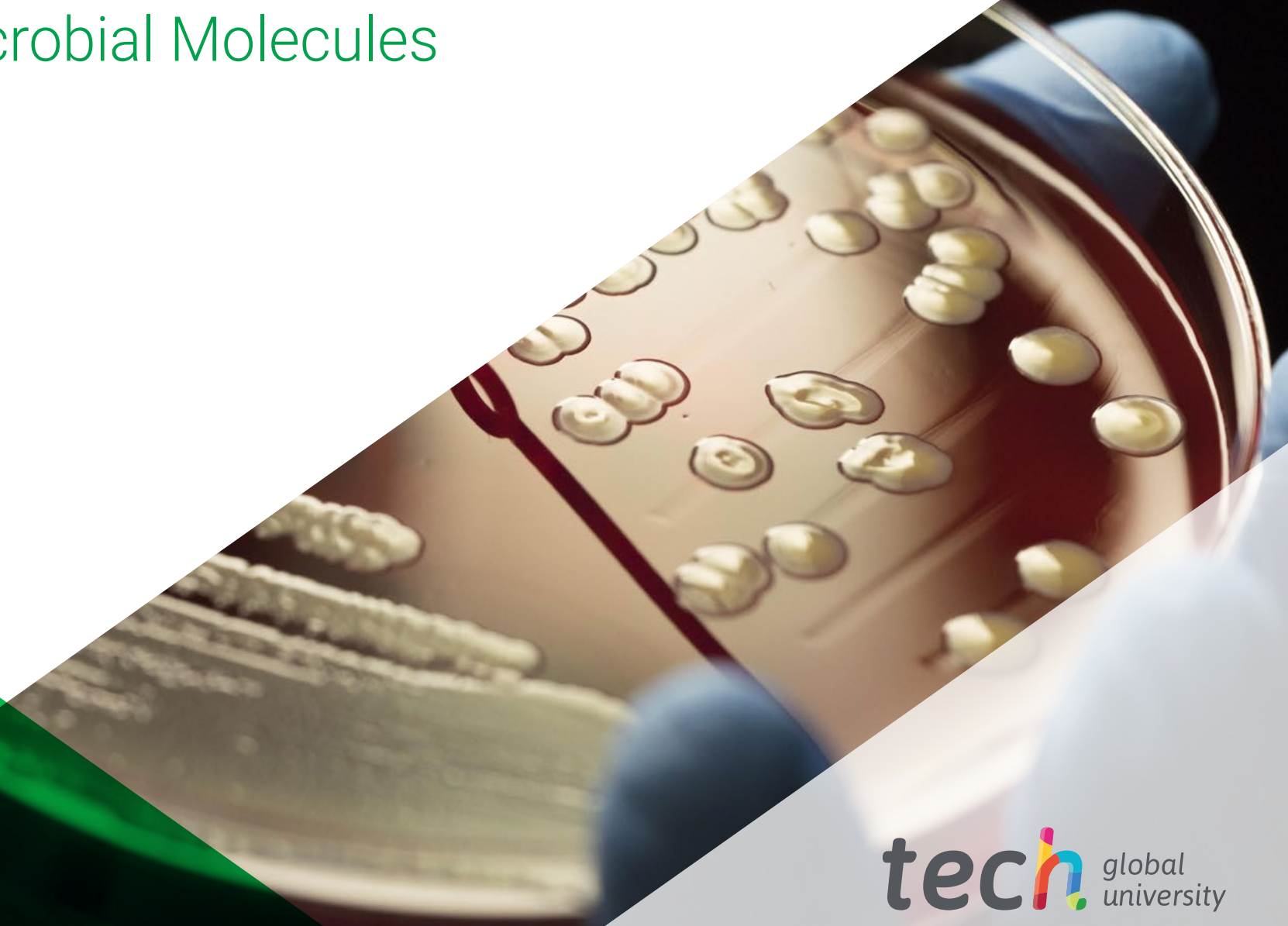


Postgraduate Certificate

New Antimicrobial Molecules





Postgraduate Certificate New Antimicrobial Molecules

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/pharmacy/postgraduate-certificate/new-antimicrobial-molecules

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01

Introduction

Clinical and pharmaceutical advances have highlighted the importance of research in the discovery of new treatments for latent and newly diagnosed diseases. Within this field, the increasingly exhaustive knowledge of the microorganisms found in nature and the consequences of their implementation in therapeutics have become a fundamental weapon in the management, above all, of bacterial infections. For this reason, and taking as a reference the latest trends in antimicrobial pharmacy, TECH and its team of experts have developed this program. This is a state-of-the-art degree with which professionals will be able to be updated in antimicrobial molecular resistance, as well as in the new drugs to combat them. All in a 100% online way and with an innovative program that includes the latest innovations in carbapenemics, monobactams, glycopeptides and much more.



“

Attend pre-recorded classes without schedules and enjoy the content as many times as you need with a Virtual Campus available 24 hours a day”

The discovery of penicillin was, without a doubt, a historical milestone that marked a before and after in the clinical and pharmaceutical field. The ability to treat infections and increase the chances of survival opened the door to a long but fruitful path, in which constant research and findings in microbiology have served as a weapon in the fight against multiple diseases. Therefore, the pharmaceutical field has developed a fundamental role, not only in the detection of organisms and in the knowledge of the consequences of their application, but also in the design of new therapies to alleviate antibiotic resistance.

Therefore, it is a field that is constantly being updated and in which being up to date is essential. For this reason, TECH and a team of experts specialized in Microbiology and Biomedicine have developed this program in New Antimicrobial Molecules. It is an innovative, complete and dynamic program that will serve pharmacists as a guide to get up to date on the mechanisms of action of the antimicrobial spectrum, therapeutic uses and adverse effects of the organisms discovered in recent years. On the other hand, the content included in the program will allow them to be updated in the differentiation of molecules among the families of antibiotics penicillins, cephalosporins, carbapenemics, glycopeptides, macrolides, tetracyclines, aminoglycosides, quinolones, etc., in a dynamic and exhaustive way.

And all this through a 100% online program that will allow them to design their study schedule, without schedules or face-to-face classes. In addition, the syllabus is complemented by hours of diverse complementary material (videos, diagrams, summaries, news and much more) so that they can expand each section in a personalized way. Therefore, TECH responds to the demand for an innovative and top level degree that allows, in a comfortable and flexible way, to update in the field of knowledge of antimicrobial molecules in just 6 weeks and from the hand of an international institution recognized by Forbes as "the best online university in the world".

This **Postgraduate Certificate in New Antimicrobial Molecules** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical case studies presented by experts in pharmaceutical management in relation to antimicrobial applications
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



A program that includes the latest trends in antimicrobial molecule management through this diverse content"

“

Get up to speed on the challenges and opportunities in the development of New Antimicrobial Molecules with TECH and this program”

The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will be able to perfect the most innovative methods in the study of new molecules with multidisciplinary materials.

Would you like to investigate the innovations of new penicillins? Then this study is perfect for you.



02

Objectives

TECH as a university institution pursues the objective of developing state-of-the-art courses of the highest level to provide professionals with access to a comfortable and flexible update. Based on this, the present program in New Antimicrobial Molecules is a clear example of the commitment of the university to offer a dynamic, comprehensive and complete syllabus with which, in just 6 weeks, pharmacists can get up to date in antimicrobial management in a 100% online way.



“

A top-level qualification aimed at the best pharmacists to raise their knowledge to the antimicrobial vanguard”



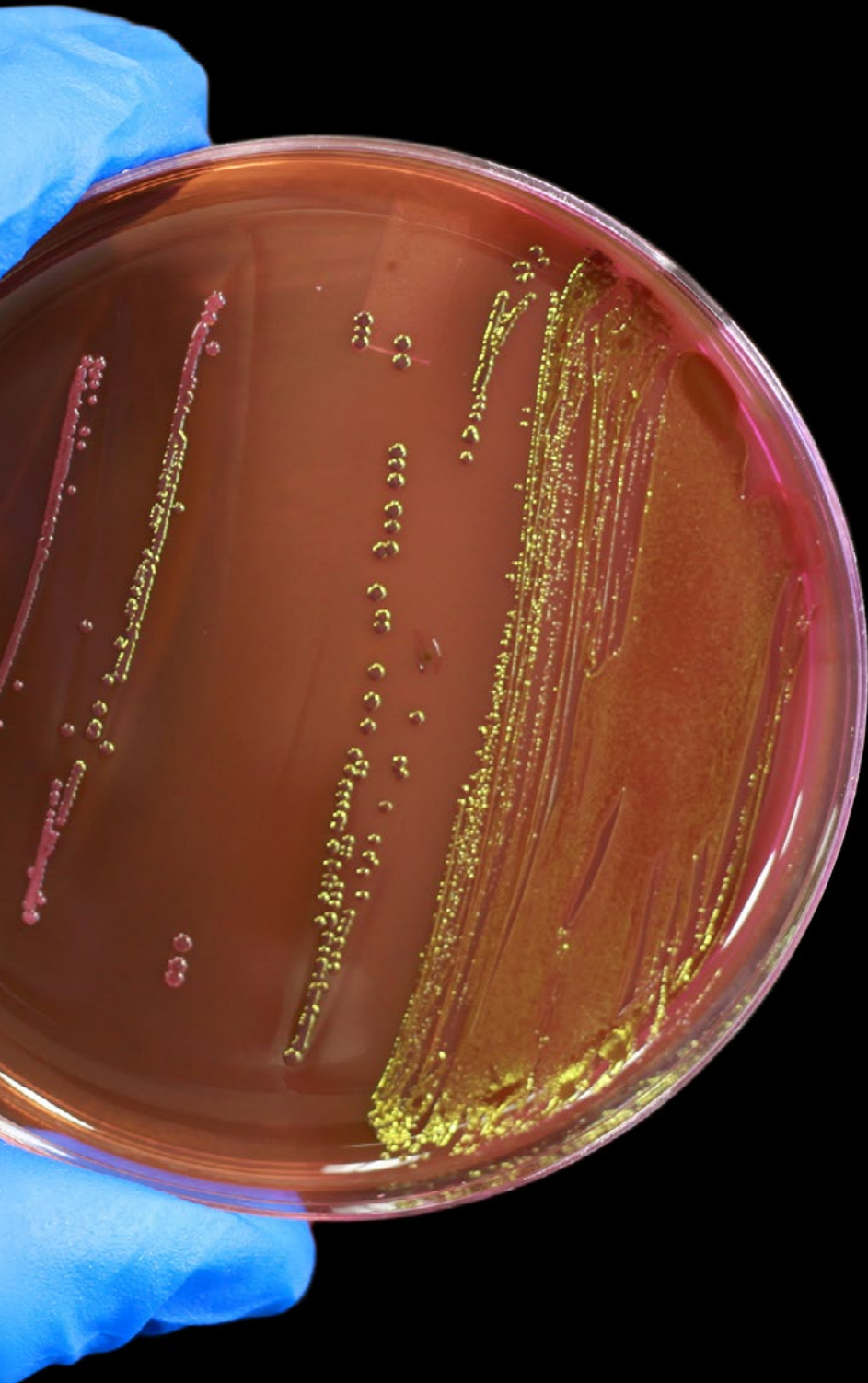
General Objective

- ◆ Understand how bacterial resistance evolves as new antibiotics are introduced into clinical practice

“

Discover the latest developments in the management of adverse effects of cephalosporins, as well as the update in dose calculations for the management of different infections”





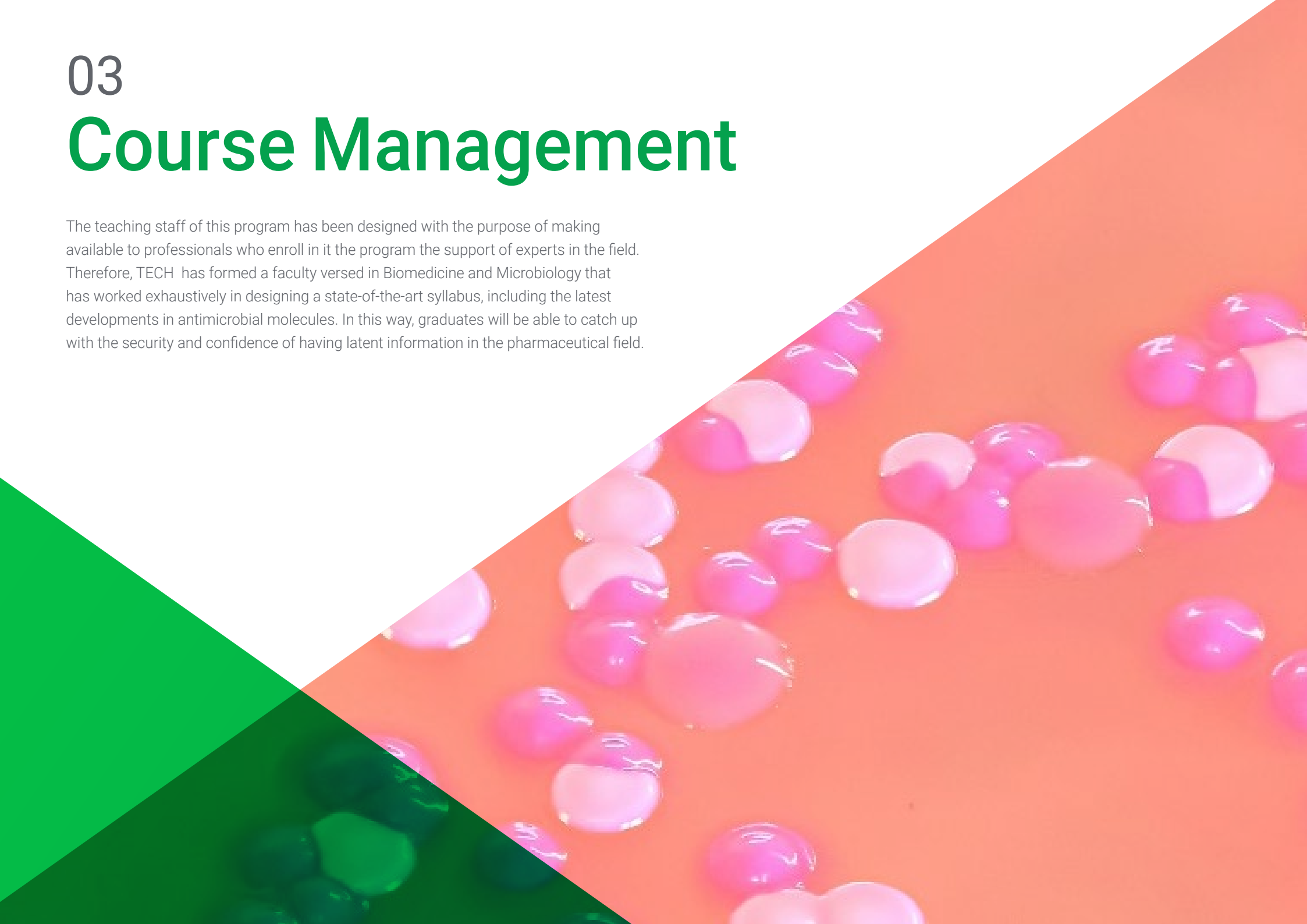
Specific Objective

- ♦ Analyze the mechanisms of action, antimicrobial spectrum, therapeutic uses and adverse effects of new antimicrobial molecules
- ♦ Differentiate new antimicrobial molecules among the antibiotic families: penicillins, cephalosporins, carbapenemics, glycopeptides, macrolides, tetracyclines, aminoglycosides, quinolones and others

03

Course Management

The teaching staff of this program has been designed with the purpose of making available to professionals who enroll in it the program the support of experts in the field. Therefore, TECH has formed a faculty versed in Biomedicine and Microbiology that has worked exhaustively in designing a state-of-the-art syllabus, including the latest developments in antimicrobial molecules. In this way, graduates will be able to catch up with the security and confidence of having latent information in the pharmaceutical field.



“

A teaching team versed in Biomedicine and Microbiology has worked exhaustively to offer you a comprehensive and state-of-the-art syllabus”

Management



Dr. Ramos Vivas, José

- Director of the Banco Santander-Universidad Europea del Atlántico Chair in Innovation
- Researcher at the Center for Innovation and Technology of Cantabria (CITICAN)
- Academic of Microbiology and Parasitology at the European University of the Atlantic
- Founder and former director of the Cellular Microbiology Laboratory of the Valdecilla Research Institute (IDIVAL)
- PhD in Biology from the University of León
- Doctor in Sciences from the University of Las Palmas de Gran Canaria
- Degree in Biology from the University of Santiago de Compostela
- Master's Degree in Molecular Biology and Biomedicine from the University of Cantabria
- Member of: CIBERINFEC (MICINN-ISCIII), Member of the Spanish Society of Microbiology and Member of the Spanish Network of Research in Infectious Pathology

Professors

Dr. Pacheco Herrero, María del Mar

- ◆ Project Manager at the European University of the Atlantic, Cantabria
- ◆ Principal Researcher at the Pontifical Catholic University Madre y Maestra (PUCMM), Dominican Republic
- ◆ Founder and Director of the Neuroscience Research Laboratory at PUCMM, Dominican Republic
- ◆ Scientific Director of the Dominican Republic Node of the Latin American Brain Bank for the Study of Neurodevelopmental Diseases, University of California, USA.
- ◆ Researcher at the Ministry of Higher Education, Science and Technology, Dominican Republic
- ◆ Researcher at the German Academic Exchange Service (Deutscher Akademischer Austauschdienst) (DAAD), Germany
- ◆ International Advisor at the National Dementia BioBank of the National Autonomous University of Mexico
- ◆ Postdoctoral Research Stays at the University of Antioquia (Colombia) and the University of Lincoln (UK)
- ◆ PhD in Neurosciences from the University of Cadiz
- ◆ Master's Degree in Biomedicine from the University of Cadiz
- ◆ Master's Degree in Monitoring of Clinical Trials and Pharmaceutical Development INESEM Business School
- ◆ Degree in Biochemistry from the University of Cordoba
- ◆ Member of: National Career of Researchers in Science, Technology and Innovation, Dominican Republic and Mexican Council of Neurosciences

04

Structure and Content

For the design of the content of this program, the teaching team has worked for months to bring together all the information necessary to update comprehensively (and in less than 6 weeks) in the field of New Antimicrobial Molecules. In addition, all the material has been adapted to a 100% online format, which will provide the graduate with flexibility and convenience during the course of the program. All this with additional multidisciplinary material that can also be downloaded for offline consultation (videos, images, diagrams, news, summaries and much more).



“

*A flexible and convenient program
that will allow you to update your
knowledge in the field of antimicrobial
molecules from wherever you want”*

Module 1. New Antimicrobial Molecules

- 1.1. New Antimicrobial Molecules
 - 1.1.1. The Need for New Antimicrobial Molecules
 - 1.1.2. Impact of New Molecules on Antimicrobial Resistance
 - 1.1.3. Challenges and Opportunities in the Development of New Antimicrobial Molecules
- 1.2. Methods of Discovery of New Antimicrobial Molecules
 - 1.2.1. Traditional Discovery Approaches
 - 1.2.2. Advances in Screening Technology
 - 1.2.3. Rational Drug Design Strategies
 - 1.2.4. Biotechnology and Functional Genomics
 - 1.2.5. Other Innovative Approaches
- 1.3. New Penicillins: New Drugs, their Future Role in Anti-Infective Therapeutics
 - 1.3.1. Classification
 - 1.3.2. Mechanism of Action
 - 1.3.3. Antimicrobial Spectrum
 - 1.3.4. Therapeutic Uses
 - 1.3.5. Adverse Effects
 - 1.3.6. Presentation and Dosage
- 1.4. Cephalosporins
 - 1.4.1. Classification
 - 1.4.2. Mechanism of Action
 - 1.4.3. Antimicrobial Spectrum
 - 1.4.4. Therapeutic Uses
 - 1.4.5. Adverse Effects
 - 1.4.6. Presentation and Dosage
- 1.5. Carbapenems and Monobactams
 - 1.5.1. Classification
 - 1.5.2. Mechanism of Action
 - 1.5.3. Antimicrobial Spectrum
 - 1.5.4. Therapeutic Uses
 - 1.5.5. Adverse Effects
 - 1.5.6. Presentation and Dosage



- 1.6. Cyclic Glycopeptides and Lipopeptides
 - 1.6.1. Classification
 - 1.6.2. Mechanism of Action
 - 1.6.3. Antimicrobial Spectrum
 - 1.6.4. Therapeutic Uses
 - 1.6.5. Adverse Effects
 - 1.6.6. Presentation and Dosage
- 1.7. Macrolides, Ketolides and Tetracyclines
 - 1.7.1. Classification
 - 1.7.2. Mechanism of Action
 - 1.7.3. Antimicrobial Spectrum
 - 1.7.4. Therapeutic Uses
 - 1.7.5. Adverse Effects
 - 1.7.6. Presentation and Dosage
- 1.8. Aminoglycosides and Quinolones
 - 1.8.1. Classification
 - 1.8.2. Mechanism of Action
 - 1.8.3. Antimicrobial Spectrum
 - 1.8.4. Therapeutic Uses
 - 1.8.5. Adverse Effects
 - 1.8.6. Presentation and Dosage
- 1.9. Lincosamides, Streptogramins and Oxazolidinones
 - 1.9.1. Classification
 - 1.9.2. Mechanism of Action
 - 1.9.3. Antimicrobial Spectrum
 - 1.9.4. Therapeutic Uses
 - 1.9.5. Adverse Effects
 - 1.9.6. Presentation and Dosage
- 1.10. Rifamycins and other Developmental Antimicrobial Molecules
 - 1.10.1. Rifamycins: Classification
 - 1.10.1.2. Mechanism of Action
 - 1.10.1.3. Antimicrobial Spectrum
 - 1.10.1.4. Therapeutic Uses
 - 1.10.1.5. Adverse Effects
 - 1.10.1.6. Presentation and Dosage
 - 1.10.2. Antibiotics of Natural Origin
 - 1.10.3. Synthetic Antimicrobial Agents
 - 1.10.4. Antimicrobial Peptides
 - 1.10.5. Antimicrobial Nanoparticles



*Opt for an avant-garde course
and don't miss the opportunity
to update yourself with TECH
and this complete program"*

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.



“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, attempting to recreate the actual conditions in a pharmacist's professional practice.

“

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

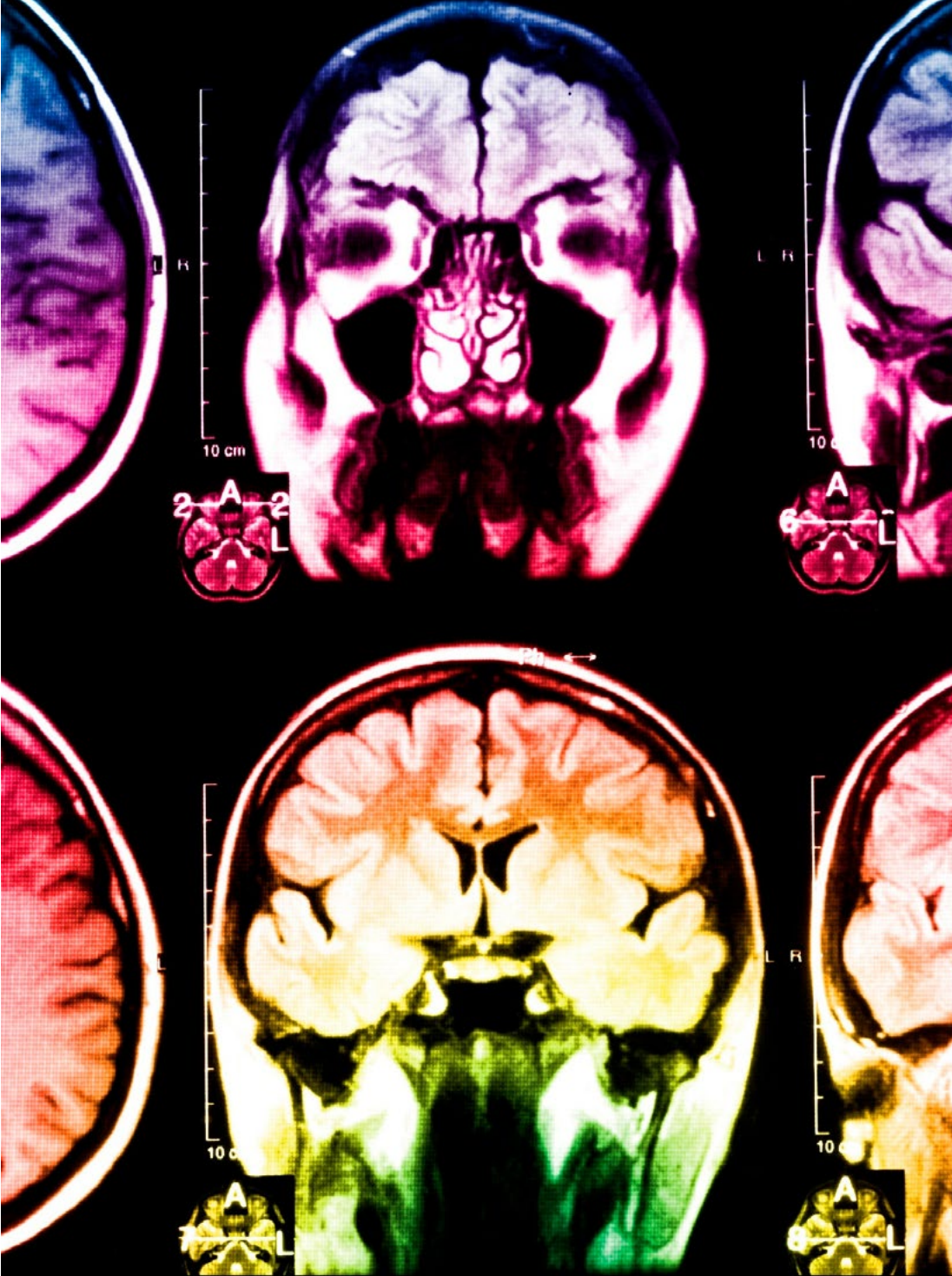
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

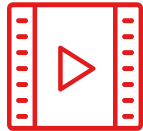
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

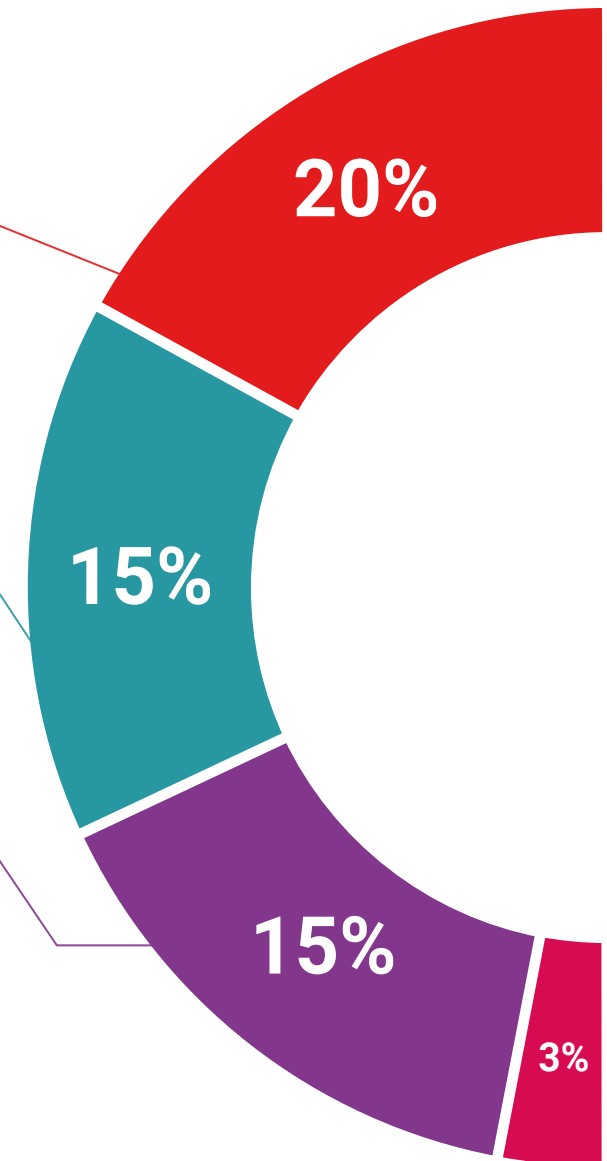
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

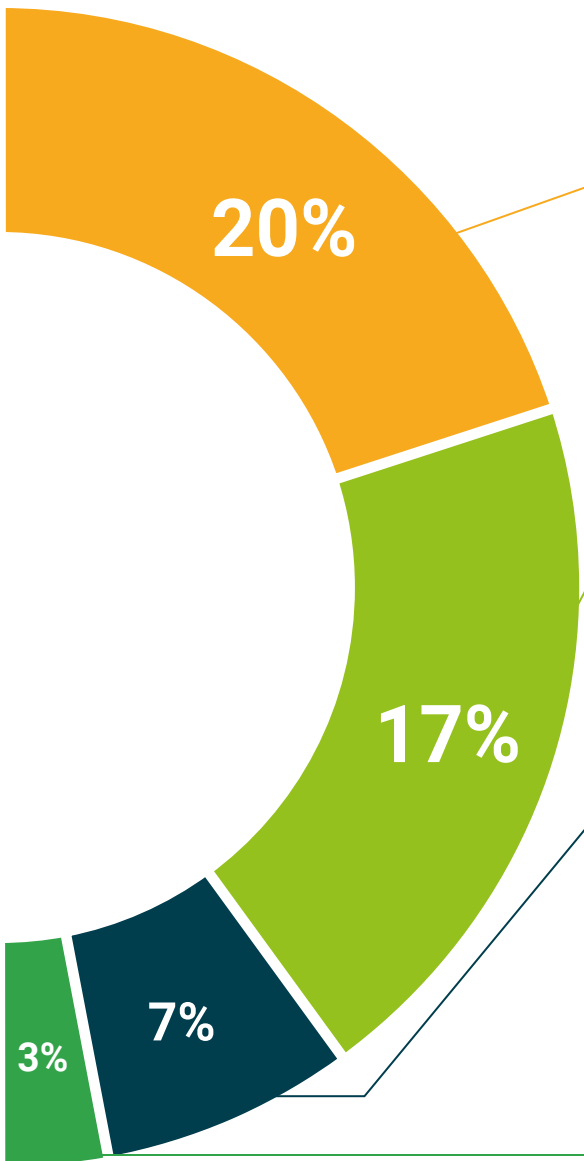
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

Certificate

The Postgraduate Certificate in New Antimicrobial Molecules guarantees, in addition to the most accurate and up-to-date knowledge, access to a Postgraduate Certificate issued by TECH Global University.



“

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This private qualification will allow you to obtain a **Postgraduate Certificate in New Antimicrobial Molecules** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in New Antimicrobial Molecules**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





Postgraduate Certificate New Antimicrobial Molecules

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate

New Antimicrobial Molecules